

# **Exhibit 9**



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## Clarice Weinberg, Ph.D.

### Senior Investigator

Biostatistics & Computational Biology Branch

**NIEHS**

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## Research Topics

Dr. Weinberg's methodologic research involves developing study designs and analytic methods for improving efficiency and reducing bias in epidemiology, particularly in reproductive and genetic epidemiology. Her focus in genetic epidemiology is on developing machine learning and other approaches to probe joint effects involving genotype and environment and multiple genes, using family data. She is also interested in improving efficiency through specimen pooling, in developing better methods for addressing limit-of-detection problems in dosimetry for single pollutants, and devising methods for analyzing mixtures. Her applied work centers on genetic and environmental causes of breast cancer through her involvements in both the Sister Study (see [sisterstudy.org](http://sisterstudy.org)) and an add-on study, of which she is the PI, called the Two Sister Study (funded by Susan G. Komen for the Cure). In collaborative work, the sister studies also

present an opportunity to follow a cohort of more than 3000 survivors, to identify genetic, treatment, tumor phenotype, and environmental factors that predict and promote long-term health following treatment.

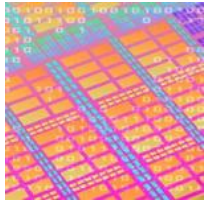
## Biography

Dr. Weinberg received her Ph.D. in Biomathematics from the University of Washington in Seattle in 1980. After serving on the faculty of the Department of Biostatistics in Seattle for two years, she came to NIEHS in 1983, where she has headed up the Biostatistics Branch since 1997. She was elected Fellow of the American Statistical Association in 1995, awarded both the Janet Norwood Award and the Mantel Award in 2005, and was elected to the American Epidemiologic Society in 2007. She is statistical editor for the American Journal of Epidemiology and holds adjunct professorships in both the Department of Epidemiology and the Department of Biostatistics at the Gillings School of Global Public Health at the University of North Carolina.

## Selected Publications

1. Weinberg CR. [Toward a clearer definition of confounding.](#)  
*Am J Epidemiol.* 1993;137(1):1-8.
2. Weinberg CR, Wilcox AJ, Lie RT. [A log-linear approach to case-parent-triad data: assessing effects of disease genes that act either directly or through maternal effects and that may be subject to parental imprinting.](#)  
*Am J Hum Genet.* 1998;62(4):969-78.
3. Weinberg CR, Umbach DM. [Using pooled exposure assessment to improve efficiency in case-control studies.](#) *Biometrics.* 1999;55(3):718-26.
4. Shi M, Umbach DM, Weinberg CR. [Family-based gene-by-environment interaction studies: revelations and remedies.](#)  
*Epidemiology.* 2011;22(3):400-7.
5. Nodzenski M, Shi M, Krahn JM, Wise AS, Li Y, Li L, Umbach DM, Weinberg CR. [GADGETS: A genetic algorithm for detecting epistasis using nuclear families.](#)  
*Bioinformatics.* 2021.

## Related Scientific Focus Areas



## Computational Biology

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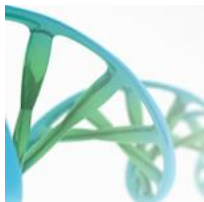
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